

Ohio Agricultural Experiment Station
Northwestern Substation, Hoytville, Ohio

Department of Horticulture Mimeograph Series No. 308

September 29, 1964

VARIETY AND MATURITY CHARACTERISTICS
OF PROCESSING TOMATOES

WALTER N. BROWN AND W. A. GOULD*

ES-24 (Eastern States-Heinz 2425) Maturity - late midseason; Disease resistance-
Fusarium wilt.

Vine: Size - medium, determinate, spread 36"-42", upright, dense foliage cover. Fruit set medium concentrated, but holds well.

Fruit Exterior: Size - medium large (100.4 to 116.3 per 25 lbs.); Shape - Slightly flattened globe; Smooth; Stem Basin - Medium shallow; Styler scar - Medium large, tends to be conspicuous; Cracking - Resistant; Shoulders - Uniform light gray-green; Color - Red, excellent, tends to color slowly, exposed fruits sunburn; Firmness - Very firm; Holding Ability - Excellent, remains firm at full color and holds well through harvest and handling; Defects - Small styler sinus some seasons.

Fruit Interior: Skin - Medium thick; Walls - Medium thick; Core - Small concentric; Locules - Medium number, small size; Color - Excellent; Flavor - Excellent; Seeds - Medium to many. Uses - General purpose. Has been successfully machine harvested.

Fireball Maturity - Early; Disease resistance - none.

Vine: Small, determinate, spread 24-36", should be planted early with young plants, maintain rapid growth. If fruits set early, vine growth is inhibited, resulting in small vine, poor fruit color and reduced fruit size. Fruit set medium concentrated.

Fruit Exterior: Size - Medium small (116.3 to 123.8 per 25 lbs.); Shape - Flattened globe; Smoothness - Generally smooth, but some irregular and rough early; Stem Basin - Small, shallow; Styler Scar - Small; Cracking - Radial usually not severe; Shoulders - Uniform Gray-green; Color - Red, excellent; Firmness - Medium firm, softens some after attaining No. 1 color, subject to bursting during handling; Holding Ability - Relatively short in field but can be machine harvested successfully; Defects - Exposed fruits sunburn, occasionally rough and mishapened fruits.

Fruit Interior: Medium thin; Wall - Medium thick to thick; Core - Medium and concentric; Locules - many, five or more; Color - Excellent; Flavor - Excellent; Seeds - many. Uses - General purpose - early maturity permits earlier plant operation. Can be planted 16-18" in 48" rows with high fertility. Has been successfully machine harvested.

Glamour Maturity - Early midseason; Disease resistance - none.

Vine: Size - Medium large, determinate, spread 42"-48", medium dense foliage cover. Fruit set - not concentrated.

Fruit Exterior: Size - large (64.9 to 106.4 per 25 lbs.); Shape - slightly flattened to oblate, X section round; Smoothness - Very smooth with slightly lobed shoulders; Stem basin - Medium shallow; Styler Scar - Small;

*Department of Horticulture, The Ohio Agricultural Experiment Station,
1827 Neil Avenue, Columbus, Ohio 43210

This page intentionally blank.

Cracking - Resistant, occasionally few shallow radial about 4% of total fruits; Shoulders - Uniform light gray green; Color - Red, excellent; Firmness - Medium firm; Holding Ability - Good; Defects - Tendency for internal browning or gray-wall; culls generally low 2 to 4%.

Fruit Interior: Skin - Medium Thick; Walls - Medium thick to thick; Core - Small concentric; Locules - Many, 5 or more; Color - Excellent; Flavor - Excellent; Seeds - Medium to many; Uses - General purpose. Does not hold well for machine harvest.

Heinz 1370 (F) Maturity - Late midseason; Disease resistance - Fusarium wilt.

Fruit set - Medium concentration, but holds well.

Vine: Size - medium large, determinate, spread 42-48", upright, dense foliage cover. Fruit set medium concentrated, but holds well.

Fruit Exterior: Size - Medium (100.0 to 125.0 per 25 lbs.); Shape - Deep globe; Smoothness - Very smooth; Stem Basin - Medium shallow; Styler Scar - Small, smooth, but an occasional styler sinus; Cracking - Resistant, occasionally few burst type on mature fruits; Shoulders - Uniform gray-green; Color - Red, excellent; Firmness - Very firm, slightly less than E.S. -24; Holding Ability - Excellent, remains firm at full color and holds well; Defects - Occasional styler sinus, defects generally low.

Fruit Interior: Skin-Medium thick; Wall - Thick; Core - Small Concentric; Locules - Many, 5 or more; Color - Red, excellent; Flavor - Excellent equal to Rutgers or better; Seeds - many; Uses - General purpose. Has been successfully machine harvested.

Heinz 1350 (VF) Maturity - Early midseason; Disease resistance - Fusarium and field resistance to Verticillium wilt. Fruit set fairly concentrated and holds.

Vine: Size - Medium large, determinate, spread 42-48", upright, medium dense foliage cover. Fairly concentrated fruit set.

Fruits Exterior: Size-Large (87.7 to 109.6 per 25 lbs.); Shape - Deeply oblate, X section round; Smoothness - Excellent; Stem Basin - Medium shallow; Styler Scar - Medium, prominent, with occasional styler sinus; Cracking - Resistant, occasionally few small radial; Shoulders - Uniform, light gray-green; Color - Red, excellent; Firmness - Good, slightly less than H-1370; Holding Ability - Very good; Defects - ?.

Fruits Interior: Skin - Medium thick; Walls - Thick; Core - Medium, concentric; Locules - Many, 6 or more; Color - Red, excellent; Flavor - very good; Seeds - Many; Uses - General purpose; Has been successfully machine harvested.

KC-135 (Campbell's) Maturity - Midseason; Disease resistance - None. Fruit set not concentrated.

Vine: Size - Large, indeterminate (42 to 54") moderately upright, fair foliage cover. Fruit set not concentrated.

Fruit Exterior: Size-Large (68.3 to 95.4 per 25 lbs.); Shape - Slightly flattened globe, X section round; Smoothness - Excellent; Stem Basin - Medium - shallow and slightly smaller than KC-146; Styler Scar - Small; Cracking - Resistant few small radial and concentric but less than KC-146; shoulders - Uniform Vg green; Color - Red, excellent; Firmness - Less firm than Rutgers, softens rapidly after full color; Holding Ability - Average but bursts in hamper or crate; Defects - Medium to low - few cat-faced fruits, tendency for shoulders to sunburn and yellow.

Fruit Interior: Skin - Medium thick; Walls - Medium thick; Core - Large and spreading may become fibrous and wiry; Locules - Many, 5 or more; Color - Excellent; Flavor - Excellent; Seeds - Medium; Uses - General purpose, satisfactory for peeling if shoulders do not sunburn, and core is not wiry. Does not hold for machine harvest.

This page intentionally blank.

KC-146(F) (Campbell's) Maturity - Midseason and slightly earlier than KC-135;

Disease resistance - Fusarium wilt. Fruit set not concentrated.

Vine: Size - Large, indeterminate (42 to 54") moderately upright;

- Foliage Cover - excellent; Fruit set not concentrated.

Fruit Exterior: Size - Large (84.2 to 98.0 per 25 lb.); Shape - Deeply oblate to globe; Smoothness - Excellent; Stem Basin - Medium diameter, shallow; Styler Scar - Medium, may be large and rough; Cracking - Resistant, some radial, but few in number and small, slightly more than KC-135; Shoulders - Normal green; Color - Red, excellent; Firmness - More firm than 135 but less than Rutgers; Holding Ability - About like Rutgers; Defects - Tendency for catfacing, and adnate anthers (scarring and open locules).

Fruit Interior: Skin - Medium thick; Walls - Medium thick; Core - Medium, concentric, but light in color; Locules - Many, 5 or more; Color - Excellent, but slower to develop than Rutgers; Flavor - Excellent; Seeds - Medium; Uses - General purpose, satisfactory for peeling. Does not hold for Machine harvest.

Red Top vs. Red Top VR-9 Maturity - Midseason, Red Top slightly earlier than VR-9;

Disease Resistance - Red Top none; VR-9 - Verticillium wilt (resistance doesn't hold in East and Midwest). Fruit set medium concentration and holds well.

Vine: Size - Red top small, VR-9 medium small, determinate.

Foliage cover dense. Fruit set well concentrated and holds well.

Fruit Exterior: Size - Small, VR-9 smaller than Red Top (308 vs. 200 per 25 lbs.); Shape - Pear, elongated oval, round in X section; Smoothness - excellent; Stem Basin - Small, shallow almost convex; Styler Scar - Small; Cracking - Resistant, almost nil; Shoulders - Uniform, medium green; Color - Excellent, but will yellow on exposure to sun and high temperatures; Firmness - Medium firm, doesn't soften on maturity; Holding Ability - Excellent high Solids content; Defects - Small fruit size.

Fruit Interior: Skin - Medium thick; Core - Small almost coreless; Locules - very small 2 to 3; Color - Excellent; Flavor - Good but dry, texture mealy; Seeds - Many for size of fruit; Uses - Processed materials blending; puree and pastes. Has been successfully machine harvested but is being surpassed in use by Roma and Roma (VF).

Roma (F) vs. Roma (VF) Maturity - Midseason, Roma slightly earlier than Roma (VF);

Disease Resistance - Roma - Fusarium and Roma (VF) both Fusarium and Verticillium wilts,

Vine: Size - Medium small () and upright; Foliage Cover - very dense. Fruit Set - Well concentrated and holds well.

Fruit Exterior: Size - Small (204.9 to 217.4 per 25 lbs.); Shape: Elongated oval to pear; Smoothness - Excellent; Stem Basin - Very small and shallow, almost coreless; Styler Scar - very small; Cracking - Resistant, almost nil; Shoulders - Uniform, light gray green; Color - Red, excellent; Firmness - Medium firm, doesn't soften after full color; Holding Ability - Excellent, high solids content; Defects - subject to Blossom-end rot and puffiness.

Fruit Interior: Skin - Medium thick, tough; Walls - Medium thick; Core - Small, concentric, almost coreless; Locules - 2 to 3; Color - Excellent; Flavor - good for type but dry and mealy texture; Seeds - Many for size of fruit; Uses - Processed materials blending, paste and puree. Has been successfully machine harvested.

This page intentionally blank.

Rutgers Maturity - late; Disease Resistance - Field type of Fusarium Wilt (multi genic).

Vine: Size - Large, indeterminate (54 to 60") moderately upright; fair foliage cover. Fruit set not concentrated and doesn't hold. Not tolerant of high day and night temperatures.

Fruit Exterior: Size - Large (97.7 to 121.4 per 25 lbs.); Shape - Deep globe; Smoothness - Excellent; Stem Basin - Medium diameter and depth; Styler Scar - Small seldom rough; Cracking - Predominately radial, some concentric, severe, under cool wet conditions numerous deep cracks from 2 to 80%; Shoulders - Normal dark green; Color - Usually excellent, may sunburn if plant defoliates; Firmness - Medium, fruit softens rapidly after full color; Holding Ability - Poor, must be harvested frequently; Defects - Cracking, lack of firmness.

Fruit Interior: Skin - Average thickness; Walls - Mediumthick; Core - Small diameter, concentric, normal; Locules - Many 4 or 5 or more, occasionally puffy; Color - Excellent, uniform; Flavor - Excellent, the standard of quality; Seeds - Medium; Uses - General purpose, excellent for peeling. Fruits too soft and do not hold - unsatisfactory for machine harvest.

Urbana vs. Tecumseh (F) Maturity - Early Midseason, Urbana slightly earlier than Tecumseh; Disease Resistance - Urbana none, Tecumseh Fusarium Wilt.

Vine: Size - Medium small determinate (36 to 42") upright, Urbana slightly smaller vine and less dense foliage than Tecumseh, Fruit set not concentrated and doesn't hold well.

Fruit Exterior: Size - Medium small (107.8 to 92.3 per 25 lbs.), Tecumseh slightly larger than Urbana; Shape - Deep oblate to globe, Tecumseh slightly more flattened; Smoothness - Excellent; Stem Basin - Small, shallow; Styler Scar - Small; Cracking - Radial, generally shallow, Tecumseh cracks less than Urbana; Shoulders - Normal dark green; Color - Red, usually excellent color, may sunburn and shoulders yellow if plant defoliates, Urbana slightly better color than Tecumseh; Firmness - Average, softens rapidly after full color. Holding Ability - Short, harvest frequently; Defects - Susceptibility to cracking, small fruit size, but high early yields.

Fruit Interior: Skin - Medium thin; Walls - Medium thick; Core - Small, concentric; Locules - Four or more, regular; Color - Generally excellent; Flavor - Excellent; Seeds - Medium to many; Uses - General purpose, larger sizes will peel satisfactorily, but low drained weight. Fruits too soft and do not hold - unsatisfactory for machine harvest.

New Varieties

Heinz 1409 (F) Maturity - Early midseason, slightly later than H-1350; Disease Resistance - Fusarium wilt.

Vine: Size - Medium large, determinate, spread 42-48", upright, medium dense foliage color. Fairly concentrated fruit set.

Fruit Exterior: Size - Large (95.8 to 115.2 per 25 lbs.); Shape - deeply oblate to flattened globe; Smoothness - Excellent with slightly lobed shoulders; Stem Basin - Medium diameter, medium depth; Styler Scar - Medium, smooth; Cracking - Resistant; Shoulders - Uniform, light gray green; Color - Red, excellent; Firmness, - Good slightly less than H-1370 but more firm than H-1350; Holding Ability - Very good; Defects - ? .

Fruits Interior: Skin - Medium thick; Walls - thick; Color - Red, excellent; Flavor - Excellent; Seeds - Many; Uses - General purpose; Has been successfully machine harvested.

This page intentionally blank.

Libby C-52 Maturity - Early; Disease Resistance - none.

Vine: Size - Small, compact, determinate, spread 24 to 30", upright; Foliage Cover - Medium dense. Fruit set - Well concentrated.

Fruit Exterior: Size - Medium small (125, 6 to 148.8 per 25 lbs.); Shape - Slightly flattened globe; Smoothness - Excellent; Stem Basin - Small diameter, shallow; Styler Scar - Small; Cracking - Resistant; Shoulders - Uniform light green; Color - Red, excellent; Firmness - Medium firm. Holding Ability - Very good; Defects - Small fruit size.

Fruits Interior: Skin - Medium thin; Walls - Medium thick; Core - Small concentric; Locules - Regular 3 to 5; Color - Excellent; Flavor - Excellent; Seeds - Many; Uses - General, except peeling - too small. Has been successfully machine harvested.

VF 145-21-4 Maturity - Early midseason; Disease Resistance - Both Fusarium and Verticillium wilts. Several strains - 145-B, 145-22.

Vine: Size - Medium small, compact, determinate, spread 24 to 30", moderately upright; Foliage Cover - Good early, opens with fruit development; All strains exhibit genetic leaf-roll; Fruit Set - Very concentrated.

Fruit Exterior: Size - Medium for 145-21-4 (100.4 to 120.8 per lb.), medium small for 145-B and 145-22 (123.8 to 142.0 and 110.6 to 130.2 to 25 lbs. respectively); Shape - VF-145-21-4 deeply oblate to near globe, 145-B and 145-22 elongated oval to pear shaped with few nipple tipped; Smoothness - All strains excellent; Stem Basin - Small diameter and shallow; Styler Scar - Small, smooth; Cracking - Resistant few burst type on mature fruits; Shoulders - VF-145-21-4 Uniform light gray green, 145-B and 145-22 segregating normal and uniform, 145-22 predominately uniform. Color - Red, excellent, but slight tendency to sunburn; Firmness - Very firm; Holding Ability - Excellent all strains; Defects - Tendency to sunburn.

Fruit Interior: Skin - Medium thick to thick; Walls - medium thick; Core - Small concentric; Locules - Small, 3 to 5; Color - Excellent; Flavor - Excellent; Seeds - Many; Uses - General, except for peeling - too small, larger fruits of VF-145-21-4 may be peeled. Has been successfully machine harvested.

This page intentionally blank.